I. AMENDMENTS

IN THE CLAIMS

Please enter the amendments to claims 34 and 47, as shown below.

Please enter new claims 87-114, as shown below.

1.-33. (Canceled)

34. (Currently amended) A composition comprising a substantially pure, enzymatically active human plasma hyaluronidase (hpHAse) polypeptide, wherein said polypeptide is glycosylated, and wherein said hpHAse polypeptide partitions into a non-ionic detergent-rich phase at a temperature above about 25°C.

35. (Previously presented) The composition of claim 34, wherein said glycosylated polypeptide is sensitive to N-glycosidase-F treatment.

36. (Previously presented) The composition of claim 34, wherein said glycosylated polypeptide comprises a mannose residue.

37. (Previously presented) The composition of claim 34, wherein said polypeptide further comprises a fatty acid modification.

38. (Previously presented) The composition of claim 37, wherein said fatty acid modification is resistant to phospholipase-C, phospholipase-D, and N-glycosidase-F.

39. (Canceled)

40. (Previously presented) The composition of claim 34, wherein said polypeptide exhibits a specific activity of at least about 6×10^5 relative turbidity reducing units per mg protein.

41. (Previously presented) The composition of claim 34, wherein said polypeptide has a relative molecular mass of about 57 kDa as determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis.

42. (Previously presented) The composition of claim 34, wherein said polypeptide exhibits a specific activity of at least about 2×10^5 relative turbidity reducing units per mg protein.

43. (Previously presented) The composition of claim 34, wherein the polypeptide is at least 60% pure.

44. (Previously presented) The composition of claim 34, wherein the polypeptide is at least 75% pure.

45. (Previously presented) The composition of claim 34, wherein the polypeptide is at least 90% pure.

46. (Previously presented) The composition of claim 34, wherein the polypeptide is at least 99% pure.

47. (Currently amended) A composition comprising a recombinant, substantially pure, enzymatically active human plasma hyaluronidase polypeptide, wherein said polypeptide is glycosylated, and wherein said hpHAse polypeptide partitions into a non-ionic detergent-rich phase at a temperature above about 25°C.

48. (Previously presented) The composition of claim 47, wherein said glycosylated polypeptide is sensitive to N-glycosidase-F treatment.

49. (Previously presented) The composition of claim 47, wherein said glycosylated polypeptide comprises a mannose residue.

50. (Previously presented) The composition of claim 47, wherein said polypeptide further comprises a fatty acid modification.

51. (Previously presented) The composition of claim 50, wherein said fatty acid modification is resistant to phospholipase-C, phospholipase-D, and N-glycosidase-F.

52. (Previously presented) The composition of claim 47, wherein said polypeptide exhibits a specific activity of at least about 2×10^5 relative turbidity reducing units per mg protein.

53. (Previously presented) The composition of claim 47, wherein said polypeptide exhibits a specific activity of at least about 6×10^5 relative turbidity reducing units per mg protein.

54. (Previously presented) The composition of claim 47, wherein said polypeptide has a relative molecular mass of about 57 kDa as determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis.

55. (Previously presented) The composition of claim 47, wherein the polypeptide is at least 60% pure.

56. (Previously presented) The composition of claim 47, wherein the polypeptide is at least 75% pure.

57. (Previously presented) The composition of claim 47, wherein the polypeptide is at least 90% pure.

58. (Previously presented) The composition of claim 47, wherein the polypeptide is at least 99% pure.

59. (Previously presented) A formulation comprising

a) a therapeutically effective amount of a substantially pure, enzymatically active human plasma hyaluronidase polypeptide, wherein said polypeptide is glycosylated; and

b) a pharmaceutically acceptable carrier.

60. (Previously presented) The formulation of claim 59, wherein the carrier is a liposome.

61. (Previously presented) The formulation of claim 59, wherein said polypeptide exhibits a specific activity of at least about 2×10^5 relative turbidity reducing units per mg protein.

62. (Previously presented) The formulation of claim 59, wherein the human plasma hyaluronidase polypeptide is present at a concentration of about 1.5×10^5 turbidity reducing units per milliliter of formulation.

63. (Previously presented) The formulation of claim 59, wherein said glycosylated polypeptide is sensitive to N-glycosidase-F treatment.

64. (Previously presented) The formulation of claim 59, wherein said glycosylated polypeptide comprises a mannose residue.

65. (Previously presented) The formulation of claim 59, wherein said polypeptide further comprises a fatty acid modification.

66. (Previously presented) The formulation of claim 65, wherein said fatty acid modification is resistant to phospholipase-C, phospholipase-D, and N-glycosidase-F.

67. (Previously presented) The formulation of claim 59, wherein said polypeptide exhibits a specific activity of at least about 6×10^5 relative turbidity reducing units per mg protein.

68. (Previously presented) The formulation of claim 59, wherein said polypeptide has a relative molecular mass of about 57 kDa as determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis.

69. (Previously presented) The formulation of claim 59, wherein the polypeptide is at least 60% pure.

70. (Previously presented) The formulation of claim 59, wherein the polypeptide is at least 75% pure.

71. (Previously presented) The formulation of claim 59, wherein the polypeptide is at least 90% pure.

72. (Previously presented) The formulation of claim 59, wherein the polypeptide is at least 99% pure.

73. (Previously presented) A formulation comprising

a) a therapeutically effective amount of a recombinant, substantially pure, enzymatically active human plasma hyaluronidase polypeptide, wherein said polypeptide is glycosylated; and

b) a pharmaceutically acceptable carrier.

74. (Previously presented) The formulation of claim 73, wherein the carrier is a liposome.

75. (Previously presented) The formulation of claim 73, wherein said polypeptide exhibits a specific activity of at least about 2×10^5 relative turbidity reducing units per mg protein.

76. (Previously presented) The formulation of claim 73, wherein the human plasma hyaluronidase polypeptide is present at a concentration of about 1.5×10^5 turbidity reducing units per milliliter of formulation.

77. (Previously presented) The formulation of claim 73, wherein said glycosylated polypeptide is sensitive to N-glycosidase-F treatment.

78. (Previously presented) The formulation of claim 73, wherein said glycosylated polypeptide comprises a mannose residue.

79. (Previously presented) The formulation of claim 73, wherein said polypeptide further comprises a fatty acid modification.

80. (Previously presented) The formulation of claim 79, wherein said fatty acid modification is resistant to phospholipase-C, phospholipase-D, and N-glycosidase-F.

81. (Previously presented) The formulation of claim 73, wherein said polypeptide exhibits a specific activity of at least about 6 x 10^5 relative turbidity reducing units per mg protein.

82. (Previously presented) The formulation of claim 73, wherein said polypeptide has a relative molecular mass of about 57 kDa as determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis.

83. (Previously presented) The formulation of claim 73, wherein the polypeptide is at least 60% pure.

84. (Previously presented) The formulation of claim 73, wherein the polypeptide is at least 75% pure.

85. (Previously presented) The formulation of claim 73, wherein the polypeptide is at least 90% pure.

86. (Previously presented) The formulation of claim 73, wherein the polypeptide is at least 99% pure.

87. (New) A composition comprising a substantially pure, enzymatically active human plasma hyaluronidase (hpHAse) polypeptide, wherein said polypeptide is glycosylated, and wherein said hpHAse polypeptide exhibits β-1,4-endoglycosidase activity and a pH optimum below about pH 4.5.

88. (New) The composition of claim 87, wherein the hpHAse polypeptide exhibits a pH optimum of between about pH 3.0 and about pH 4.0.

89. (New) The composition of claim 87, wherein the hpHAse polypeptide exhibits a pH optimum of between about pH 3.0 and about pH 3.7.

90. (New) The composition of claim 87, wherein said glycosylated polypeptide is sensitive to N-glycosidase-F treatment.

91. (New) The composition of claim 87, wherein said glycosylated polypeptide comprises a mannose residue.

92. (New) The composition of claim 87, wherein said polypeptide further comprises a fatty acid modification.

93. (New) The composition of claim 92, wherein said fatty acid modification is resistant to phospholipase-C, phospholipase-D, and N-glycosidase-F.

94. (New) The composition of claim 87, wherein said polypeptide exhibits a specific activity of at least about 6×10^5 relative turbidity reducing units per mg protein.

95. (New) The composition of claim 87, wherein said polypeptide has a relative molecular mass of about 57 kDa as determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis.

96. (Previously presented) The composition of claim 87, wherein said polypeptide exhibits a specific activity of at least about 2×10^5 relative turbidity reducing units per mg protein.

97. (New) The composition of claim 87, wherein the polypeptide is at least 60% pure.

98. (New) The composition of claim 87, wherein the polypeptide is at least 75% pure.

99. (New) The composition of claim 87, wherein the polypeptide is at least 90% pure.

100. (New) The composition of claim 87, wherein the polypeptide is at least 99% pure.

101. (New) A composition comprising a recombinant, substantially pure, enzymatically active human plasma hyaluronidase (hpHAse) polypeptide, wherein said polypeptide is glycosylated, and wherein said hpHAse polypeptide exhibits β-1,4-endoglycosidase activity and a pH optimum below about pH 4.5.

102. (New) The composition of claim 101, wherein the hpHAse polypeptide exhibits a pH optimum of between about pH 3.0 and about pH 4.0.

103. (New) The composition of claim 101, wherein the hpHAse polypeptide exhibits a pH optimum of between about pH 3.0 and about pH 3.7.

104. (New) The composition of claim 101, wherein said glycosylated polypeptide is sensitive to N-glycosidase-F treatment.

105. (New) The composition of claim 101, wherein said glycosylated polypeptide comprises a mannose residue.

106. (New) The composition of claim 101, wherein said polypeptide further comprises a fatty acid modification.

107. (New) The composition of claim 106, wherein said fatty acid modification is resistant to phospholipase-C, phospholipase-D, and N-glycosidase-F.

108. (New) The composition of claim 101, wherein said polypeptide exhibits a specific activity of at least about 2×10^5 relative turbidity reducing units per mg protein.

109. (New) The composition of claim 101, wherein said polypeptide exhibits a specific activity of at least about 6×10^5 relative turbidity reducing units per mg protein.

110. (New) The composition of claim 101, wherein said polypeptide has a relative molecular mass of about 57 kDa as determined by sodium dodecyl sulfate polyacrylamide gel electrophoresis.

111. (New) The composition of claim 101, wherein the polypeptide is at least 60% pure.

112. (New) The composition of claim 101, wherein the polypeptide is at least 75% pure.

113. (New) The composition of claim 101, wherein the polypeptide is at least 90% pure.

114. (New) The composition of claim 101, wherein the polypeptide is at least 99% pure.